

REMARKS

Reconsideration and allowance of the subject application are respectfully requested. Claims 1-20 are pending in the present application, claims 1, 6, and 11 being independent. Claims 1, 3, 6, 10-14, 18-19, and 20 have been amended and claim 15 has been cancelled.

Allowable Subject Matter

Applicants appreciate the Examiner's indication that claim 11-20 are allowable over the prior art. Additionally, Applicants appreciate the Examiner's indication that claim 10 would be allowable if rewritten in independent form and to include all of the limitations of the base claim and any intervening claim. Applicants, at this time choose, not to amend Claim 10 in light of Applicant's contention of the allowability of base claim 6 and assert that claim 10 should be allowable over the prior art of record for the reason's indicated by the Examiner.

Specification Objections

Specification objections not related to antecedent basis for claims have been addressed via the clarifications in substitute paragraphs discussed above, Thus Applicants respectfully request that the Examiner remove the objection with respect to these paragraphs.

The Examiner further objects to the specification with respect to antecedent basis for the formulas in claims 14, 16, and 18 and for the "an analog gain reduction" and "an allowed analog-to-gain reduction increment" in claim 13.

The Examiner's attention is directed to the disclosure, page 5, lines 20-21. The relevant passage recites "the digital gain and analog gain reduction is downloaded during radio initialization and whenever there is a change in the equipment specific parameters." Thus, an analog gain reduction is discussed, providing antecedent basis for such an element in

claim 13. Likewise, the Examiner's attention is directed to the disclosure, page 7, lines 1-2. The relevant passage recites that the Controller may consider "the customer set analog gain reduction parameter, which are typically adjustable in increments of 0.1dB." Thus, an analog gain reduction increment is discussed, providing antecedent basis for such an element in claim 13.

The Examiner has objected to the formulas in claims 14, 16, and 18 as allegedly lacking antecedent basis in the specification. The Examiner's attention is directed to the disclosure, page 7, lines 8-10. The relevant passage recites "For example, using typical values, I-max is calculated as equal to $(1.0597 \text{ rms counts/dgu}) \cdot (10^{3\text{dB}/10} \cdot 77760 \text{ dgu}^2)^{0.5} / (2)^{0.5}$." Thus, the formula in claim 14 is discussed, providing antecedent basis.

The Examiner's attention is further directed to the disclosure, page 7, lines 16-17, which states "the desired digital gain for each quadrature component is computed as $(2^{(12-1)} - 1) / (295 \cdot 10^{8\text{dB}/20})$ " providing antecedent basis for the formula in claim 16. Likewise the Examiner's attention is directed to the disclosure, page 8, lines 3-4, which states "and 8.8dB (...computed as $20\log_{10} 2.76$...), the actual gain reduction is $-9\text{dB} + 3\text{dB} + 8.8\text{dB}$ " providing antecedent basis for the formula in claim 18.

Although Applicants have referred to the disclosure in providing clarifying examples and addressing the specification objections, such referrals should not be taken as limitative of the scope of the pending claims.

Therefore, Applicants request the Examiner withdraw her objection to the specification.

Claim Objections

Claims 1, 3, 6, 10, 11, 14, 18, and 19 stand objected to for alleged informalities. Applicants have amended claims 6, 10, 11, 14, 18, and 19 for clarity in the manner suggested by the Examiner. Claim 1 has been

amended to refer to a digital "front" end and analog "back" end in keeping with the antecedent basis provided in line 1 of claim 1. Claim 3 has been amended to refer to "the" digital representation of "the" signal since "a" digital representation and "a" signal are introduced in the base claim, claim 1. Claim 15 has been cancelled. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the claim objection.

Prior Art Rejections

1. Rejection under 35 U.S.C. § 102 (e) based on Mandyam

Claims 1, 3, and 5-7 stand rejected under 35 U.S.C. §102(e) as being anticipated by Mandyam (U.S. Patent No. 6,535,564). This rejection is respectfully traversed.

Mandyam is directed to a method and apparatus for adaptively quantizing a digital signal prior to digital-to-analog conversion during pulse shaping in a pulse-amplitude modulated (PAM) system (Mandyam, Abstract). Signals are digitally processed to generate an information signal and passed through a digital pulse-shaping filter. The output of the digital pulse-shaping filter is then quantized by processing the filter output through an adaptive scaler and a digital-to-analog converter (DAC). The adaptive quantization is performed by determining scaling factors that are used to scale the output of the digital pulse-shaping filter before the signal is input to the DAC. The scaling factors are derived from the probability density function (pdf) of the signal at the output of the digital pulse-shaping filter by minimizing the mean-squared error between the DAC output signal and the DAC input signal (Mandyam, col.2, ll. 26-47).

Claims 1 includes "scaling the digital representation of said signal to the full scale range of said at least one digital-to-analog converter." Claim 6 uses a digital gain where "the digital gain scales the signal to a full scale range of at least one digital-to-analog converter." Claims 1 and 6 scale the

signal to the DAC to extend over the range of a DAC. Mandyam uses scaling factors derived by minimizing the mean-squared error between the DAC output signal and the DAC input signal. Thus Mandyam attempts to keep the same shape before and after the DAC failing to use the full scale range of operational ability of the DAC. Thus, Mandyam fails to show, teach, or suggest all the elements of claims 1 and 6.

For anticipation under 35 U.S.C. § 102 "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)(M.P.E.P. 2131).

Applicants have already explained why Mandyam fails to teach or suggest the invention of independent claims 1 and 6. Since claims 3, 5, and 7 each depend, either directly or indirectly, from one of claim(s) 1 and 6, claims 3, 5, and 7 are allowable at least for the reasons generally expressed above with respect to claim(s) 1 and 6.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the outstanding rejection under 35 U.S.C. § 102(e) based on Mandyam.

2. Rejection under 35 U.S.C. § 103 (a) based on Mandyam in view of Yang

Claims 2, 4, 8, and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mandyam as applied above with respect to claim 1 and 6, further in view of Yang (U.S. Patent No. 6,504,862). This rejection is respectfully traversed.

In the rejection the Examiner alleges that Yang teaches the features of claims 2, 4, 8, and 9. However Yang fails to show, teach, or suggest the features of claims 1 and 6 missing from Mandyam, as discussed above. Yang is directed to a method and apparatus for reducing the peak power probability of a spread spectrum signal by clipping the signal (Yang,

abstract). Yang fails to suggest, teach, or show scaling the signal to the DAC to extend over the range of a DAC, instead Yang clips the signal.

To establish a *prima facie* case obviousness under 35 U.S.C. § 103, the Examiner has the burden of meeting the following three basic criteria: (1) the prior art must teach or suggest all of the claim limitations; (2) there must be a reasonable expectation of success; and (3) there must be some suggestion or motivation, either in the art or knowledge generally available to one of ordinary skill in the art to modify the reference or to combine teachings (M.P.E.P. § 2143)(emphasis added).

Applicants have already explained why Mandyam fails to teach or suggest the limits of independent claims 1 and 6. Additionally Yang fails to teach or suggest the lacking features in Mandyam. Therefore, since claims 2, 4, 8, and 9 each depend, either directly from claims 1 and 6, claims 2, 4, 8, and 9 are allowable at least for the reasons generally expressed above with respect to claims 1 and 6 with respect to Mandyam.

Accordingly Applicants respectfully request reconsideration and withdrawal of the outstanding rejection of claims 2, 4, 8, and 9 under 35 U.S.C § 103(a).

CONCLUSION

In view of the above amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the formal objections and rejections to the claims, and the rejections based on prior art. Because all claims are believed to define over prior art of record, Applicants respectfully request an early indication of allowability.

If the Examiner has any questions concerning this application, the Examiner is requested to contact the undersigned at (703) 668-8000 in the Washington, D.C. area.

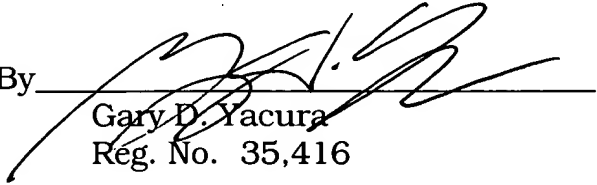
If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayments to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Very truly yours,

HARNESS, DICKEY & PIERCE, P.L.C.

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